

CHAPTER IV

NON-STANDARD MAGAZINES

4-1. General. Non-standard earth covered magazines are those not listed in AR 385-64. Non-standard magazines are approved for all quantities of explosives up to 250,000 pounds. Earth cover over the top of these magazines should be equal to or greater than that required for standard magazines.

4-2. Evaluating Non-Standard Magazines. TM 5-1300 should be used to design or evaluate the blast resistance of non-standard magazines. Headwalls and doors of standard magazines are designed for 100 psi overpressure and 22 millisecond load duration (equivalent impulse of 1,100 psi-millisecond). Magazines not classified as standard must be analyzed for this loading to determine whether storage capacity can be increased to 500,000 pounds. A guide prepared by the U.S. Army Engineer Division, Huntsville provides procedures for determining the adequacy of the non-standard headwalls and doors to withstand blast effects from a donor explosive source.¹ The guide is based on TM 5-1300 criteria and magazine tests.

4-3. Hybrid Magazines. Hybrid magazines have been developed and used by installations to meet specific needs. As stated above, these magazines use components from more than one standard magazine. This type of magazine is not considered preapproved for construction and, therefore, requires DDESB approval if it is to be sited as a standard magazine. This magazine type offers no real advantage over standard magazines and their use is discouraged.

4-4. Preapproved Non-Standard Magazine. Magazine 422-15-01 (Figure 12) is a reinforced concrete cubicle magazine which is preapproved for a limited storage of 425 pounds. This magazine is approved for siting at the intermagazine separation distance of standard magazines.

¹U.S. Army Engineer Division, Huntsville, HNDED-CS-93-4, "Guide for evaluating Blast Resistance of Non-Standard Magazines", December 1994.

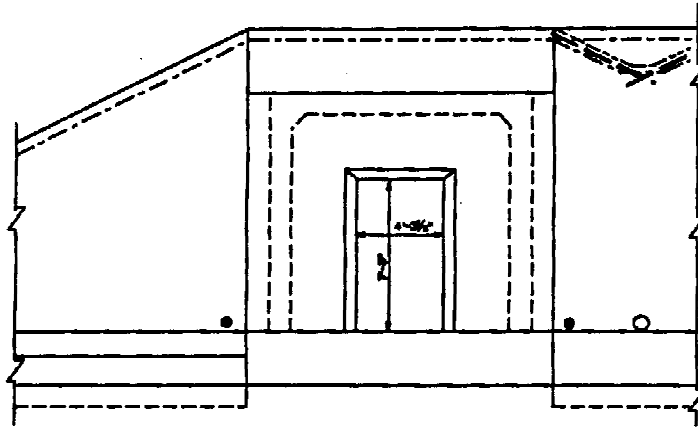


FIGURE 12. MAGAZINE, CONCRETE CUBICLE, EARTH-COVERED

DRAWING CODE	STD 422-15-01
ISSUE DATE	JUNE 1987
DIMENSIONS	10'W x 10'L x 10'H
DOOR	HINGED, SINGLE-LEAF 4'-3 1/2" x 7'-3"
EXPLOSIVE LIMIT	425 LBS (NEW)
PHYSICAL SECURITY	HIGH SECURITY HASP (MIL-H-29181)
GENERAL FEATURES	1. WALLS: 1'-0" THICK REINFORCED CONCRETE 2. ROOF: 1'-0" THICK REINFORCED CONCRETE
DDESB APPROVAL DATE	03 MARCH 1988

MAGSD-1.DGN